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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,226	01/23/2002	Shu Yuen Ron Hui	12364.28USU1	6884

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EXAMINER

VU, DAVID HUNG

ART UNIT PAPER NUMBER

2821

DATE MAILED: 04/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/056,226

Applicant(s)

HUI ET AL.

Examiner

David Vu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14-20 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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Part III DETAILED ACTION

Drawings

1. There are two figures 4. A print of the drawing showing the proposed changes in red is required with the next response.

Specification

2. Applicant's cooperation is requested in correcting any other errors of which applicant may become aware in the specification, drawings, and claims.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

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(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

4. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Schleicher U.S.

Pat. No. 6,181,080.

Schleicher discloses an electronic ballast for a discharge lamp comprising an inverter circuit HW1; a resonant circuit including inductor L30, ignition capacitor C31 is provided between the resonant circuit and lamp LP3; inverter HW1 having a half-bridge (two switches); see, for example, figure 3, columns 5-6.

5. Claims 14-15,17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Xia et al U.S. Pat. No. 5,739,645.

Xia et al disclose an electronic ballast with a nominally constant dc link voltage comprising an inverter circuit 150 may be varied for regulating lamp power in response to a monitored dc link current; a resonant circuit including transformer T1; and means IC1 for detecting a short circuit or open circuit condition (e.g., when a lamp is removed or defective) at lamps LAMP1-LAMP2, for detecting when a dc link current falls below a reference value, and for disabling the ballast if the lamps fail to ignite; see, for example, figures 1-2; columns 6, 8; column 9, lines 56+; column 10.

Regarding claims 19-20, columns 8 and 10 do disclose such ignition process,i.e.,

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the success or failure of the ignition is detected by comparing the lamp current with a reference current, in the event of ignition succeeding and the lamp current being higher than the reference current, the ballast is then operated at a high switching frequency, and inherently when an attempt to ignite the lamp is made an ignition voltage is generated for a relatively short duration only such that even if repeated attempts are made to ignite the lamp the rms lamp voltage remains below a preset level determined by safety considerations.

Note that "...for a high intensity discharge lamp..." has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. The recitation "...may be varied for...monitored dc link current.", e.g., claim 17, merely describe non-positive recitations of potential operational features of the invention. Thus, the recitation is given no patentable weight because they do not positively recite the actual structural limitations of the invention.

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Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schleicher.

Schleicher as discussed from the above, essentially discloses the claimed invention but fails to explicitly disclose two ignition capacitors in parallel and separated by a cable. However, providing a second ignition capacitor in parallel with the first capacitor would have been considered obvious to one having ordinary skill in the art at the time of applicant's claimed invention was made so as to control the level of igniting voltage supplied to the lamp.

8. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Xia et al in view of Stack U.S. Pat. No. 6,222,322.

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Xia et al as discussed from the above, essentially disclose the claimed invention but fail to explicitly disclose a delay means. Stack discloses delay means C12 in the ballast protection circuit 112 (figure 4; column 9, lines 24-40). An obvious modification would have provided the Xia et al. reference with the delay means as taught by Stack. It would have been obvious to one having ordinary skill in the art at the time of applicant's claimed invention was made to have provided the Xia et al. reference with the delay means as it would have provided the ballast with a means for delaying the activation of the short or open circuit detecting aspect of IC1.

9. Claims 3-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schleicher in view of Xia et al.

Schleicher as discussed from the above, essentially discloses the claimed invention but fail to explicitly discloses means for varying the switching frequency of the inverter. Xia et al disclose controller 200 (figure 1). Thus, it would have been obvious to one having ordinary skill in the art at the time of applicant's claimed invention was made to have provided the Schleicher reference with the controller 200 as it would have provided the ballast with a means for varying the switching frequency of the inverter.

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Regarding claim 4, it would have been obvious to one of ordinary skill in the art to have selected certain operating frequency ranges for the inverter circuit so as to achieve total lamp discharge.

Regarding claim 5, the Xia et al reference (columns 9-10) does disclose controller 200 is provided for regulating the lamp power during steady state operation by varying the switching frequency of the inverter.

Regarding claims 6-7,10-11, the Xia et al reference does disclose means IC1 for detecting a short circuit or open circuit condition (e.g., when a lamp is removed or defective) at lamps LAMP1-LAMP2, for detecting when a dc link current falls below a reference value, and for disabling the ballast if the lamps fail to ignite and a further attempt to reignite after an interval.

Regarding claims 8-9, columns 8 and 10 of the Xia et al reference do disclose such ignition process, i.e., the success or failure of the ignition is detected by comparing the lamp current with a reference current, in the event of ignition succeeding and the lamp current being higher than the reference current, the ballast is then operated at a high switching frequency, and inherently when an attempt to ignite the lamp is made an ignition voltage is generated for a relatively short duration only such that even if repeated

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attempts are made to ignite the lamp the rms lamp voltage remains below a preset level determined by safety considerations.

10. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schleicher and Xia et al. in view of Stack.

Schleicher and Xia et al. as discussed from the above, essentially disclose the claimed invention but fail to explicitly disclose a delay means. Stack discloses delay means C12 in the ballast protection circuit 112 (figure 4; column 9, lines 24-40). An obvious modification would have provided the Schleicher and Xia et al. combination with the delay means as taught by Stack. It would have been obvious to one having ordinary skill in the art at the time of applicant's claimed invention was made to have provided the Schleicher and Xia et al. combination with the delay means as it would have provided the ballast with a means for delaying the activation of the short or open circuit detecting aspect of IC1.

Allowable Subject Matter

11. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and should be carefully reviewed before any amendment is filed.

The patent by Sodhi U.S. Pat. No. 5,869,935 is cited as showing a ballast circuit with open/short circuit detector and protection circuit for shutting off the inverter. The patent by Daub is cited as showing a ballast circuit having a safety protection device.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Vu whose telephone number is (703) 305-6077.

14. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.

15. Papers related to Technology Center 2800 applications **only** may be submitted to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center Fax Center number is (703) 308-7722 or (703) 308-7724.

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dv

April 21, 2003

A handwritten signature in black ink, appearing to read 'David Vu', with a stylized, flowing script.

DAVID VU
PRIMARY EXAMINER